

ABSTRACT

ELECTROLYTIC OXIDATION PROCESS FOR OBTAINING A CERAMIC COATING ON THE SURFACE OF A METAL

Process for obtaining a ceramic coating on the surface of a metal having semiconducting properties, such as aluminium, titanium, magnesium, hafnium, zirconium and their alloys, by a physico-chemical transformation reaction of the treated metal. This process consists in immersing the metal workpiece (5) to be coated in an electrolytic bath (3) composed of an aqueous solution of an alkali metal hydroxide, such as potassium hydroxide or sodium hydroxide, and of an oxyacid salt of an alkali metal, the metal workpiece forming one of the electrodes, and in applying a signal voltage of overall triangular waveform to the electrodes, that is to say a signal having at least a rising slope and a falling slope, with a form factor that can vary during the process, generating a current which is controlled in its intensity, its waveform and its ratio of positive current to negative current.

Figure 1